In the CLAIMS:

1. (original)A remote XRD means for identifying a material in a volume of interest (VOI) comprising; a. a plurality of N X-ray sources targeted towards said VOI ; wherein N is an integer number higher 1 ; b. a plurality of M X-ray detectors adapted to receive diffracted X-rays so an image comprising at least a portion of the obtained XRD patterns is obtained ; wherein M is an integer number higher 1 ; c. a processor adapted to measure said patterns; d. a database comprising records of patterns'parameters characterizing predetermined materials; said database comprising records of materials that a notification should be provided when identified ; and, e. alerting means adapted to alert wherein the identified material is one of said predetermined group.

2. (original)The remote XRD means according to claim 1, wherein the material is selected from at least one of the group of explosives, flammable, toxic, chemical and biological warfare substances in either gas, liquid or solid states, spores, drugs and narcotics, radioactive agents or a combination thereof.

3. (original)The remote XRD means according to claim 1, wherein the VOI is a metallic material.

4. (original)The remote XRD means according to claim 1, wherein the material is being transferred on a passenger and/or in his carry-on luggage.

5. (original)The remote XRD means according to claim 1, wherein the XRD is any technique adapted for calculating the diffraction pattern or energy profile obtained by X-ray scattering of the material.

6. (original)The remote XRD means according to claim 5, wherein the XRD is any technique adapted for calculating the diffraction pattern or energy profile obtained by X-ray back scattering of the material.

7. (original)The remote XRD means according to claim 1, wherein the X-ray detector is a 2D detector.

8. (original)The remote XRD means according to claim 1, wherein the processor is adapted to measure at least a portion of the XRD patterns.

9. (original)The remote XRD means according to claim 8, wherein the processor is adapted to measure the central portion of the XRD patterns.

10. (original) The remote and non-intruding XRD means according to claim 1, adapted to identify moving VOIs ; wherein said VOI is either carried by means of walking persons or carried on a conveyor belt, or the VOI is being moved in any way.

11. (original)The remote and non-intruding XRD means according to claim 1, adapted to identify sampled moving VOIs ; additionally comprising means to sample VOI so the presence of the VOI is notified; and means to surveillance or follow up said VOI before identifying it nature.

12. (original)The remote XRD means according to claim 11, adapted for online surveillance or follow up.

13. (original)The remote XRD means according to claim 1, wherein the alerting means are adapted to alert either online or offline, to alert to a predetermined remote location, to be in communication with effective means adapted to isolate or immobilize said VOI transport until subsequent notification or any combination thereof.

14. (original)The remote XRD means according to claim 1, wherein the detector is a Cell-X ; adapted for acquiring both VOI's XRD image and information about its energy profile.

15. (original)A method for acquiring XRD image of a material in a VOI, comprising the steps of ; a. receiving VOI coordinates from lower stage system; b. irradiating the material in the VOI ; c. acquiring of XRD patterns ; d. extracting of XRD patterns; e. converting the XRD patterns (e. g. rings) of said VOI to standard powder X- ray diffraction spectrum ; f. searching and/or matching records in a database for material identification; and then, g. alerting in case said material is in matching a predetermined record.

16. (currently amended)A method for acquiring XRD image of a VOI by the remote XRD means as defined in claim 1 ~~or in any of its dependent claims~~, comprising the steps of a. receiving VOI coordinates from lower stage system ; b. irradiating a material in a VOI; c. acquiring of XRD patterns ; d. extracting of XRD patterns; e. converting the XRD patterns (e. g. rings) of said material to standard powder X-ray diffraction spectrum; f. searching and/or matching records in a database for material identification ; and then, g. alerting in case said material is in matching a predetermined record. wherein said XRD patterns are acquired by the remote XRD means as defined in claim 1 or any of its depended claims.

17. (currently amended)The method according to claims 15 ~~or 16;~~ wherein back-diffraction is provided.

18. The method according to claims 15 ~~or 16 or 17;~~ wherein the detector is a Cell-X, adapted for acquiring both VOI's XRD image and information about its energy profile.

19. (new)The method according to claims 16 wherein back-diffraction is provided.

20. (new)The method according to claims 16 wherein the detector is a Cell-X, adapted for acquiring both VOI's XRD image and information about its energy profile.